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INFORMATION RETRIEVAL INDEX

The *A.I.Ch.E. Journal* is using the key words as part of the index to Volume 10. The boldface number indicates the role that the key word plays in the article; the lightface number is the page number. The roles of these key words have been made to conform with the modified definition of roles presented in Chem. Eng. Progr., Vol. 60, No. 8, p. 88 (August, 1964).

COMMUNICATIONS TO THE EDITOR

Observation of Binary Interdiffusion Coefficients in Constant-Volume Systems

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PROBLEM

Isothermal interdiffusion of two liquids, A and B, across an inert porous disk separating two well-stirred reservoirs of constant volume is considered. The following assumptions are made: (1) the liquids are ideal and completely miscible, and mixing is not accompanied by changes in pressure or volume; (2) the disk is sufficiently porous so that any pressure differences arising between the reservoirs are instantaneously levelled out by convective flow in the disk; (3) agitation in the reservoirs is sufficient to restrict concentration gradients entirely to the disk; (4) the reservoirs are sufficiently large so that interdiffusion is quasi-stationary and the disk volume is negligible compared to the reservoir volumes; (5) the individual (or intrinsic) diffusion coefficients D_A and D_B are independent of liquid-phase composition.

The assumptions, in particular (5), are essentially those of the Hartley-Crank model (*1*) to which the derivation up to Equation (3) is equivalent. The purpose of the present note is not to enter into the controversy about this model (*2*) but, rather, to show that experimental results may fail to reflect the dependence of the interdiffusion coefficient on liquid-phase composition. According to the model, this dependence is pronounced; however, the system may behave as though the coefficients were constant.

DERIVATION

The fluxes of the components A and B relative to the disk are composed of transfer by diffusion relative to the

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